

A Catalogue of the Birds in the Collection of the Bombay Natural History Society—8

Pteroclididae and Columbidae

BY

HUMAYUN ABDULALI

[Continued from Vol. 67 (2) : 298]

This part covers 724 specimens of 73 species and subspecies up to No. 544a in INDIAN HANDBOOK (3 : 161). Miss Shanta Nair has continued to assist.

485 *Syrrhaptes tibetanus* Gould (Tsomoriri Lake, Ladak, Tibetan Sandgrouse 5 : 277

5 : 1 ♂ 4 ♀♀

1 *Lake Ruhas Tal*, 1500', 2 *Gyantse*, 13,100', *Tibet*; 2 Tso Morari, Ladak.

	Wing	Bill	Tail
♂	252 (254-270)	14 (16-20)	215 (203-263)*
♀♀	251, 253, 255, 261 (248-266)	12(3), 13(16-20)	164(2), 175, 182 (203-216)

* BIRDS OF THE SOVIET UNION 2 : (107) gives the male tails as 196-230, and quotes Stuart Baker's measurements, which are repeated in IND. HANDBOOK, with a query.

485a *Syrrhaptes paradoxus* (Pallas) (Southern part of Tartarian Desert) Pallas's Sandgrouse 5 : 276

1 ♀ Gujner, Bikanir, Rajasthan. 31 December 1924.

This record is omitted in SYNOPSIS, but is referred to in IND. HANDBOOK (3 : 79). In 1928 (FAUNA 5 : 276) Stuart Baker referred to the Nawab of Dhar shooting a single specimen, presumably in Dhar, Central India, and made no reference to the Bikanir record. No specimen from India is available at the British Museum (Nat. Hist.).

486 *Pterocles alchata caudacutus* (S. G. Gmelin) (Northern Persia) Large Pintail Sandgrouse 5 : 268

23 : 11 ♂♂ (5 by plumage) 12 ♀♀ (4 by plumage)

12 *Mesopotamia*; 2 *Persian Gulf*; 1 Quetta, 1 Baluchistan; 1 Malar Kotla, Punjab; 5 Bikanir, Rajasthan; 1 Deesa, Palanpur, Gujerat.

The plumages are difficult to follow and one has to accept Stuart Baker's statement that the transition to the adult plumage is in patches.

I have accepted the chocolate shoulder to the wing as an invariable male character, and measure the sexes :

	Wing	Bill
♂♂	200-219 av. 209 (213-224)	11-14 av. 13 (♂♀ 12·5-14·5, IH c. 13-15)
♀♀	195-213 av. 204 (194-231)	12-14 av. 13·3

There does not appear to be any appreciable difference in size between the sexes.

487 *Pterocles exustus erlangeri* (Neumann) (El Hota, Lahej, Southern Arabia) Indian Sandgrouse 5 : 271

37 : 24 ♂♂ 13 ♀♀

2 Muscat, Arabia ; 1 Gawah, 3 miles east of Mand, Baluchistan ; 1 Ambala, 5 Bahawalpur ; Punjab ; 2 Delhi ; 1 Koshmor, Upper Sind, 1 Pithoro, 2 Barun, Kohistan, Sind ; 2 Kutch ; 5 Bhopal, 2 Shamgarh, Indore ; 3 Drangadhra, 2 Bhavnagar, 3 Deesa, 1 Patan, Mehsana, 2 Kaira, 1 Kharagodha ; 1 Bassein, Thana.

	Wing	Bill	Tail, with central pin-feathers
24 ♂♂	174-183 av. 176 (IH 177-185)	11-13 av. 11·7 17-20 from skull	108-144 av. 127 105-142
13 ♀♀	165-180 av. 172 (IH 171-177)	11-13 av. 11·6 16-19 from skull	87-107 av. 99 85-104

Sp. No. 13156, a female from Deesa (14 July) has no barring on the black of the underparts and is also patchily marked on the upperparts, being quite different from the adults of both sexes. No. 13146, a ♂ from Barun, Kohistan, has the black band on the upper breast extending half way across the upper back on one side only ! No. 13138, a female from Muscat, appears to have the upperparts more closely barred than in the other females, but with only two specimens from Muscat it is not possible to express any opinion as to whether *erlangeri* and *hindustan* Meinertzhagen are separable.

488 *Pterocles senegallus* (Linnaeus) (Senegal *errore*, Algeria) Spotted Sandgrouse 5 : 273

21 : 12 ♂♂ 9 ♀♀

12 Mesopotamia ; 1 Ormara ; 1 Sind ; 2 Pacham Island, 4 Dhordi in Bunni, Kutch ; 1 no locality.

	Wing	Tail ¹
♂♂	193-204 av. 198 (190-208)	121-157 av. 139·8 (127-167)
♀♀	187-199 av. 192 (176-197)	103-118 av. 112

¹ Birds without pins in the tail are excluded.

Four specimens (2 ♂♂ 2 ♀♀) obtained in Bunni in Kutch in February are all darker, above and below, than the others. Both males and females show more brownish (or ochre) yellow, and almost no grey on the back. Neumann's description of *remotus* (xerox copy kindly sent by Dr. Ripley

and translated by Dr. Sálím Ali) agrees with this, but his statement that the 'middle of the abdomen and spots of ♀♀ (are) pure black (in *P. s. senegallus* mixed with dark brown); and the crown pure grey, not with reddish or sandy tinge as in *P. s. senegallus*' cannot be confirmed. He designated a ♂ obtained at Kunaria in Kutch, NW. India, as the type and, speaking from memory, stated his impression that the Indian specimens (at the B.M.), none of them from the island of Kutch, were paler than the specimens from Kutch, which he received afterwards. In the absence of the material which prompted this remark, he expressed his inability to decide if on the island of Kutch 'there lives a separate race which is different from the birds from continental N. India'.

Except for the 4 specimens referred to above, all the others, including two collected on Pacham Island, Kutch, show no separable differences, and I am inclined to offer the following suggestions:—

- (1) The resident population in Kutch is darker and separable.
- (2) The material available from India, excluding that resident in the island of Kutch, is not different from that from Mesopotamia.
- (3) Though *remotus* is based on a specimen from Kutch, it represents a migrant form which may or may not be different from nominate *senegallus*.

489 Pterocles orientalis orientalis (Linnaeus) (in Oriente=Anatolia)
 Imperial or Blackbellied Sandgrouse 5 : 262

21 : 17 ♂♂ 4 ♀♀ (1 *partial albino)
 1 *Sheik Saad, Iraq*; 2 *Shiraz*, 1 *Teheran-Kasvin Rd., Iran*; 1 *Chitral, N.W.F.P.*; 1 *Malarkotla*, 2 *Sirsa*, 2 *Bahawalpur*, 1 *Punjab*; 7 **Bikanir*, 1 *Rajasthan*; 1 *Karachi*; 1 *Deesa, Gujerat*.

	♂♂	♀♀
Wing	225-248 av. 234 (226-248)	236, 241, 243 (203-234)
Tail	86-104 av. 97 (III 101-128)	94, 99, 103

Both males and females show considerable variation in colour, but the plumages do not appear to be well understood and it is not possible to express an opinion as to whether Indian birds differ from those from Iraq and Iran. The map in IND. HANDBOOK (3 : 87) shows *arenarius* Pallas (type locality between the lower Ural River and the lower Volga) west of the nominate race, while Vaurie (1961, PAL. BIRDS 50 : 5) refers to it as the eastern race occurring in India.

The female wings are larger than suggested in IND. HANDBOOK (ex FAUNA) and the male tails smaller.

490 Pterocles coronatus atratus Hartert (Eastern Persia*) Coronetted Sandgrouse 5 : 267

*Vaurie (1965 : 532) found that the type was collected at Kaskin, 40 kilometres north of Bambur, Persian Baluchistan.

	9 : 6 ♂♂	3 ♀♀					
	1 6 miles, 1 18 miles, south-west of Gusht, Persian Baluchistan ; 2 Pasni, 1 Zayak Kharun, 65° 57'E., 27° 57'N., 1 Ormara, Kalat ; 2 Wano, 1 Waziristan.						
			Wing	Bill	Tarsus	Tail	
6 ♂♂	185-192 av.	189	12-13	23-25 av.	24	78-89 av.	83·5
<i>ladas</i> ♂♂	182, 192		12, 13	24, 25		78, 86	
	(178-196)		(13-14)	(c. 25)		(c. 120-132)	
3 ♀♀	179, 182, 183		13(3)	24, 25(2)		77, 78, 86	
<i>ladas</i> ♀	192		12	24		86	

The tails are much shorter than recorded earlier.

490a *Pterocles coronatus ladas* Koelz (Soneri Lake, Sind) Sind Coronnated Sandgrouse

3 : 2 ♂♂ 1 ♀

2 Bataro, Kerchat, Kohistan, 1 Jhimpur, 80 miles east of Karachi, Sind.

The three birds listed above are outstandingly paler than the others, except one marked ♀ from Wano, Waziristan. This specimen No. 13114 differs from the other females in having the lower belly unmarked, which may be a juvenile plumage. Supported by the fact that this race is accepted by Vaurie (1965 : 533), I am leaving them separate.

With the assistance of the Zoological Survey of Pakistan, 'Soneri Lake' has been traced to be within two miles north-west of Sonda Dak Bungalow, about 20 miles from Thatta on the Thatta-Hyderabad Road. The lake is now merged with the old Kalri Lake to form the new Kalri Lake. It may be noted that accepting Bataro as east of the Kohistan hills west of Karachi, these birds are well isolated from those from Baluchistan by the hills and by 400 miles from Waziristan.

491 *Pterocles indicus arabicus* Neumann (Lahej, Arabia) Closebarred Sandgrouse

5 : 265

14 (details below)

(a) 4 : 2 ♂♂ (one marked ♀) 2 ♀♀ 20 miles from Muscat, Arabia.

These were obtained by Major A. R. Barton and are dated 23 October 1916. One of the original labels is marked 'Cage bird' and this would presumably apply to all of them. They (particularly the females) are distinctly paler than those under (b), which include two more males from Muscat. There has been no concurrence of opinion regarding the separability of *arabicus* from the race occurring in Iran and India, and Ticehurst (*JBNHS* 34 : 479 and *Ibis* 1937 : 408) held that *arabicus* could not be recognised and birds from Sind were identical with nominate *leichensteini* (now synonymised with *P. i. arabicus*) from Nubia, presumably assuming that birds from the type locality of *arabicus* (Lahej, near Aden) were similar to those from Nubia. The material available

does not permit any definite opinion but suggests that a pale form (like the cage bird) exists in a restricted area in Arabia. If so, the birds from Muscat to India will not be *arabicus*. In *JBNHS* 25, p. 751, Major Barton stresses the fact that he did not find it breeding near Muscat, where it was migratory.

(b) 10 : 6 ♂♂ (1 juv.) 4 ♀♀

1 near Muscat (Maj. A. R. Barton, 18 Feb. 1916), 1 Muscat, Arabia; 2 Panjgur, 1 Pirander c. 180 miles SSW. of Kalat, 1 Kodap, Mand, 1 Kalat, Baluchistan; 1 Wano, Waziristan, 1 Parachinar, Kurram Valley, N.W.F.P., 1 Lhandu, 20 miles from Karachi (trans-Indus).

The possibility of these specimens not being *arabicus* has been referred to above. The two males from Parachinar and Lhandu show a similarity to the cage birds from Muscat under (a), while both the males from Muscat included in (b) are heavily blotched with black as also is a male from Panjgur.

Sp. No. 13096 a juvenile ♂ from Pirander resembles the female except that the area to be enclosed by the two blackish bands in the adult (male) is almost unmarked.

The light and the dark males appear very distinct but, in the absence of any evidence to the contrary, have to be accepted as variations of the same race.

	Wing	Bill	Tarsus	Tail
2 ♂♂	<i>arabicus</i> (a)			
	—, 165	16(2)	24, 25	65, 69
6 ♂♂	<i>arabicus</i> (b)			
	166-180 av. 171	14-16 av. 15	22-25 av. 24	60-72 av. 66.5
	(175-190 IH ex Hartert)			
2 ♀	<i>arabicus</i> (a)			
	—, 157 mtg.	14, 16	24(2)	—, —,
4 ♀♀	<i>arabicus</i> (b)			
	158, 159, 166, 171	—, 14, 15, 16	23, 24(3)	63, 64, 70, 72
	(IH 172-187 ex Hartert)			
(♂♀)	166-186	c. 12-14	c. 22-27	72-77)

492 *Pterocles indicus indicus* (Gmelin) (Coromandel, India) Painted Sandgrouse 5 : 264

20 : 14 ♂♂ (1 juv.) 6 ♀♀

1 Tonk, 1 Danta*, 1 Rajputana; 3 Bhuj, 1 Mata-No-Madh, Kutch; 3 Shantgarh, Indore; 1 Kuno, Gwalior, 1 Bhopal; 1 Vagjipur, 3 Deesa, Palanpur, Gujerat; 4 Vijayanagar, Bellary, Mysore.

The specimens show a certain amount of variation and, though not referred to in the FAUNA (5 : 274), Stuart Baker in 'Game Birds of the Indian Empire' (*JBNHS* 22 : 221) says: 'Females of this species vary almost more than the males and the difference in tint on the back is very great, varying from a rich almost rufous bay, which is very rare, to a pale sandy buff which is very common.'

The two females from Vijayanagar, Bellary, Mysore, have their upper parts strongly rufous, with the wing coverts similarly tinged, and are strikingly different from the others. Two males from the same place have the bars on the upper back rufous, and not white as in the others, except No. 19200 from Tonk, Rajasthan. This difference is not so striking as in the females.

Whistler (*JBNHS* 38 : 680) referred, among the few from Southern India, to two from Madras and Arkonam in the Government Museum at Madras. As these are mounted and could not be sent, representative specimens were sent to Dr. Satyamurthi, the Director, who kindly confirms that both the ♂ and ♀ resemble the birds from Vijayanagar and are different from the others.

I have listed (*JBNHS* 66 : 263) 2 Rock Bush Quail from Vijayanagar, Bellary (also collected by G. C. Shortridge who obtained the four present Sandgrouse from Vijayanagar) as *Perdicula argoondah salimalii* Whistler (type locality Marikanive, Mysore), which are separated by their bright rufous upper parts and which are very similar to those of the female sandgrouse from the same area.

Though one juvenile male (No. 13087* from Rajputana) is as rufous as the southern females, it would appear that the northern birds are appreciably different from toptotypical and southern ones, and need separation.

	Wing	Bill	Tarsus	Tail
13 ♂♂	167-185 av. 175 (IH 166-180, once 188, once 208)	13-16 av. 15.5	24-26 av. 24.8	68-81 av. 77
5 ♀♀	164, 167, 171, 176 (IH 166-176) (♂♀ 158-184)	12, 14, 15 c. 13-15	24(2), 25(3) c. 23-25	75, 76, 78, 80(2) 80-101.

The tails are shorter than recorded and females have smaller wings. IND. HANDBOOK does not indicate where the exceptionally large male was obtained. The key on p. 91 (vol. 3) separating *arabicus* from *indicus* is not very satisfactory. In ♂ *arabicus*, the closer 'barring' on the lower throat may perhaps be better termed 'spotting' and the reference to the shape of the black bar on white forecrown can just be understood when both are placed together. In several *indicus* of both sexes, the feathered front of the tarsus cannot be seen to be barred or spotted.

493 **Treron apicauda apicauda** Blyth (Southeastern Himalayas and hill ranges of Assam) Pintailed Green Pigeon 5 : 199

8 : 6 ♂♂ (1 by plumage) 1 ♀ 1 o ?

1 Sadiya, 1 Cachar, 1 Changchang Pani, Assam ; 1 Tezu, Lohit Valley ; 2 Saidon, 1 Tista Valley, Upper Burma ; 1 Mindon Yoma, Thayemyo.

Wing	♂♂ 165-171 av. 167 (160-175)	1 ♀ 160	1 o ? 155
Tail	♂♂ 164-224 av. 184 (220-254)	1 ♀ 111	1 o ? 112

As in some of the other pigeons, there is a dense growth of upper and undertail coverts which necessitates special care to ensure that measurements are taken from the base of the tail.

494 *Treron sphenura sphenura* (Vigors) (Himalayas*) Wedgetailed Green Pigeon 5 : 200

23 : 12 ♂♂ 11 ♀♀ (2 pull., 1 juv.)

1 Doola, Kishtwar, Kashmir; 7 Simla, 1 Koti State, 1 Patiala; 4 Garhwal, 1 Almora, 1 Mussoorie; 3 Nepal; 1 Kurseong; 2 *Chin Hills*; 1 Lamta Thack (?).

Wing	(173-185)	Tail
♂♂ 175-190 av. 181.6	}	111-127 av. 121.5
♀♀ 170-180 av. 174.6		107-129 av. 120
		114-139

It may be worth keeping in mind the fact that Osmaston thought he saw and heard this species in April at Pachmarhi, C.P. (*JBNHS* 28 : 458).

* The type locality was restricted to 'Simla-Almora area' in Himachal Pradesh by Ticehurst and Whistler, *Ibis* 1924, p. 472.

495 *Treron curvirostra nipalensis* (Hodgson) (Nepal) Thickbilled Green Pigeon 5 : 196

8 ♂♂ (3 by plumage)

1 Golaghat, Assam; 1 *North Kraung*, 1 *Megok*, *Ruby Mines District*, *Upper Burma*; 1 *Miyitkyina*; 1 *Taunggyi*, *South Shan States*; 2 *Sandoway*; 1 *Nam Lai*, *Siam*.

All the specimens, some of which were originally correctly named, were found listed with *Treron pompadora* which they resemble very closely.

The red gape and red base of the bill said to be diagnostic in live birds are not visible in the skins.

Wing 139-150 av. 145 (124-146, repeated in π ; Ticehurst, *Ibis* 1939, p. 212 measures 142-155 and opines that Baker has measured juveniles)

Tail 70-90 av. 81 (84-95)

496 *Treron pompadora affinis* (Jerdon) (West Coast of Indian Peninsula) Greyfronted Green Pigeon 5 : 188

19 : 10 ♂♂ 8 ♀♀ 1 o ?

1 Pen, Kolaba; 1 Poona; 1 Ratnagiri; 9 Kanara; 2 Mercara, Coorg; 1 Hikkeri, Sagar, Mysore; 1 Nilgiris; 1 Ponmudi, 1 Pulanayarkotta, Kerala; 1 Pattanpur (T. R. Bell—North²Kanara?)

Wing	(138-150)	Tail
♂♂ 140-149 av. 145	}	78-90 av. 84
♀♀ 135-148 av. 142		79-86 av. 82

497 *Treron pompadora pompadora* (Gmelin) (Ceylon) Ceylon
Greyfronted Green Pigeon 5 : 185

1 ♂ Ceylon. Wing 147, tail 89.

Sp. No. 12768 differs from the southwestern birds in having a yellow forehead and no chestnut on the undertail coverts.

498 *Treron pompadora conoveri* Rand & Fleming (Butwal, Nepal)
Nepal Greyfronted Green Pigeon

nil

Compared with *phayrei* it is said to be a brighter form, with the yellow of the throat and the orange of the breast more intense, and the green of the breast and abdomen and hind neck duller and less greyish (Birds from Nepal, *Fieldiana* 41, p. 70).

499 *Treron pompadora phayrei* (Blyth) (Tounggoo, Burma) Ashy-headed Green Pigeon 5 : 186

9 : 6 ♂♂ 3 ♀♀

2 Tezu, Lohit Valley, 1 Golaghat, 1 Sadiya, 1 Dayang, Assam ; 1 *Upper Burma*, 1 *Prome*, 1 *Myitkyina*, 1 *Henzada*.

	Wing	Tail
6 ♂♂	153-160 av. 158 (143-165)	85-91 av. 89
3 ♀♀	150-155 av. 152.6 (145-160)	82, 87, 88

Stanford & Ticehurst have drawn attention (*Ibis* 1939, p. 211) to the wing measurements in the FAUNA as probably including juveniles, and have corrected them to 156-165. Sp. No. 12779 from Lohit Valley, Assam, has a bill shorter and stouter than in the others.

500 *Treron pompadora chloroptera* Blyth (Nicobars) Nicobar
Greyfronted Green Pigeon 5 : 188

13 : 8 ♂♂ 5 ♀♀ (2, wings only)

4 Car Nicobar ; 2 Katchal, 3 Camorta, 1 Trinkut, 1 Nankowry, Central Nicobars ; 2 Campbell Bay, Great Nicobar.

500a *Treron pompadora andamanica* (Richmond) (Macpherson Strait, South Andamans) Andaman Greyfronted Green Pigeon

6 : 3 ♂♂ 3 ♀♀

1 Port Blair, 4 Wrightmyo, 1 South Andamans.

Wing ♂♂ 163, 177, 178 ♀♀ 169, 177, 178

I have explained (*JBNHS* 64, p. 164) my reasons for maintaining this race.

501 *Treron bicincta bicincta* (Jerdon) (Sea coast south of Tellicherry)
Orangebreasted Green Pigeon 5 : 191

8 : 6 ♂♂ (2 by plumage) 2 ♀♀

3 North Kanara ; 1 Thekadi, Travancore ; 1 Sankrametta, Vizagapatam ; 1 Besai, Mourbhanj, 1 Kutri, Daspalla, Orissa ; 1 *Kamaing*, *Upper Burma*.

	Wing	Tail
6 ♂♂	153-165 av. 159	86-92 av. 89
2 ♀♀	148, 153	82, 82.
	(♂♀ : 153-164, once 170 (91-110))	

In the SYNOPSIS the distribution is said to be 'from Bombay and U.P. south and east through peninsular India'. Though there is a record of a single female obtained at Karachi (*JBNHS* 40 : 330), on the west the northernmost records which I can trace are from North Kanara.¹

502 *Treron bicincta leggei* Hartert (Ceylon) Ceylon Orangebreasted Green Pigeon 5 : 192

1 ♂ Ceylon. Wing 151 Tail 82.

The single specimen (No. 12788 obtained in 1914) is very similar to the Indian birds listed above.

503 *Treron phoenicoptera phoenicoptera* (Latham) (India) Bengal Green Pigeon 5 : 181

14 : 8 ♂♂ 5 ♀♀ 1 o ?

2 Baghat State, NW. Himalayas ; 1 Saugar, 1 Mandikheri, Hoshangabad, M.P. ; 1 Rajputtee, 1 Champaran, 3 Tirhut, 1 Hazaria, 1 Pathargata, Bhagalpur, Bihar ; 1 Shahjehanpur, 1 Pilibhit, U.P. ; 1 Bankulwa Morang, Nepal.

	Wing	Tail
♂♂	181-195 av. 188 (184-200)	98-125 av. 109 (110-118)
♀♀	180-185 av. 183 (180-186)	94, 100, 103, 112.

Birds of both sexes from Bihar and U.P. (Nos. 12726, 12730, and 12732) have the grey of the underparts washed with yellowish. The yellow of the upper breast is however distinctly separate.

In many places, these pigeons disappear almost completely at certain seasons and, though these movements are no doubt linked with the availability of their food (in places largely *Ficus* spp.), the directions of their movements are quite unknown. It is possible that the birds taken in Madhya Pradesh were non-breeding migrants, but the southern form *chlorigaster* is said to have been found with the nominate form at Ambala, Punjab (Jones, *JBNHS* 31, p. 1006). A more detailed examination of larger numbers may perhaps provide an explanation.

Except for the yellow on the lower belly, Sp. No. 12738 (o ?) from Champaran, Bihar, is grey like a *Columba* sp. with almost no yellow or green. Derek Goodwin of the British Museum (N.H.) to whom I mentioned this informs me that they have one specimen of *Treron sphenura* which similarly lacks green and adds : 'As this is a specimen that looks as if it has been in captivity I put its coloration down to its having been fed with "sattoo" (flour made from roasted gram—H.A.) and deprived of yellow carotenoids in its foods. As you will know, many birds moult out grey and white where they are normally green and yellow if given arti-

¹ This has now been suitably altered in IND. HANDBOOK 3 : 105

ficial foods that do not contain carotenoid pigments. When this is done with the green and yellow *Parus major newtoni* it moults out grey and whitish and looks very like *Parus major cinereus* ! I suppose one could also get aberrant individuals that had no yellow pigment or lacked the ability to deposit it in their feathering, as one does in blue Budgerigars or the so-called blue Canaries (which are really grey) '.

504 *Treron phoenicoptera chlorigaster* (Blyth) (Indian Peninsula)
Southern Green Pigeon 5 : 184

21 : 8 ♂♂ 13 ♀♀

1 Sanchi, Bhopal ; 1 Kolkaz, Berar ; 1 Deesa, Palanpur, 1 Vagjipur, 3 Pandwa, 1 Mahul, Surat Dangs ; 1 Salsette, Bombay ; 1 Murbad, Thana, 1 Panvel, Kolaba, 2 Bhor, Poona, 1 Ratnagiri ; 2 Kanker, 1 Bailadila, M.P. ; 2 Badrama, Orissa ; 2 Bulandshar, U.P.

♂♂	♀♀
Wing 170-192 av. 187 (184-200)	170-193 av. 183 (180-186)
Tail 84-118 (110-118)	116-135 av. 124

There is some confusion and uncertainty regarding the type locality. Blyth (1843, *J. Asiat. Soc. Bengal* 12 (1 : 167) when describing this bird does not refer to its origin, but Sclater, 1892, *Ibis* p. 86, while listing the type specimen in the Indian Museum states that it was obtained by Blyth 'near Calcutta', in which area it does not normally occur and was no doubt a straggler. Whistler (1936, *JBNHS* 38 : 672) restricted it to Salem District, South India, which if tenable would be most reasonable.

505 *Treron phoenicoptera phillipsi* Ripley (Nilgala, Uva, Ceylon)
Ceylon Green Pigeon

nil

EL *Treron phoenicoptera viridifrons* Blyth (Tenasserim)* 5 : 183

4 : 1♂ 1 ♀ 2 ♂?

1 *Henzada*, 1 *Thayetmyo*, 1 *Prome*, 1 *Maymyo*.

Wing	Tail
192, 191, 176, 177 (184-200)	135, 125, 116, 123

* The type locality was restricted to Moulmein, Amherst District, Tenasserim, by Deignan (1963) *U.S. Nat. Bull.* 226, p. 48.

EL *Ducula aenea aenea* (Linnaeus) (Flores, Indonesia) Malay Green
Imperial Pigeon 5 : 207

1 ♀ *Pahang, Malaya*. Wing 232, bill 26, tarsus 25, tail 139.

The upper parts are a clearer green than in most of the others.

506 *Ducula aenea sylvatica* (Tickell) (Borabhúm) Northern Green
Imperial Pigeon 5 : 208

16 : 9 ♂♂ 2 ♀♀ 5 ♂?

3 Chanda, 3 Bastar, M.P. ; 3 Orissa ; 1 Pasi Ghat, Assam ; 1 *Chindwin R.*, 2 *Upper Burma*, 2 *S. Shan States*, 1 *Prome Dist.*, *Burma*.

Birds from Assam and Northern Burma are slightly larger than those
[148]

from Central India, which again are very slightly larger than *pusilla* from further south.

	Wing	Bill	Tarsus	Tail
3 ♂♂ 4 ♀♀? Assam & N. Burma.	229-255 av. 241	25-29 av. 27	25-27 av. 26	139-150 av. 146
6 ♂♂ Chanda, Bastar & Orissa.	218-235 av. 225	22-26 av. 24.3	25-26 av. 25.5	140-150 av. 144.
2 ♀♀ Bastar	219, 219	25, 26	25(2)	140, 144
		<i>pusilla</i>		
1 ♂ *3♀?	212*, 221, 223, 224	23* 25(2), 28	24*, 25, 26(2)	139*, 143, 146

In some birds the upper parts are dark green with little or no sheen. Both varieties occur in the same area but, while only one of the seven from Assam and Burma is 'dark', seven of the nine from India are 'dark' rather than shiny green.

507 *Ducula aenea pusilla* (Blyth) (Nilgiris*) Southern Green Imperial Pigeon 5 : 209

4 : 1 ♂ 3 ♀?

3 N. Kanara, Mysore ; 1 Chitteri Range, Salem District.

These birds have been trinomially named in accordance with the generally accepted ranges of *pusilla* and *sylvatica* but, apart from the usual north-south decline in size, there does not appear to be sufficient reason for separating them.

It may also be recalled that, though the type locality is usually accepted as 'Nilgiris', Jerdon (1864, BIRDS OF INDIA, 3 : 456) wrote : ' Mr. Blyth was mistaken when he stated (1849, *J. Asiatic Soc. Bengal* 18 : 816) that the specimen sent in by myself, from which he made his *pusilla*, was from the Neilgherries ; indeed I have not even seen this pigeon in the Wynaad.' I have looked up Blyth (1849) where it is said to be from the Nilgiris but I can find no reference to Jerdon.

*Whistler (Eastern Ghats, *JBNHS* 38 : 675) accepts the type locality as 'Nilgiris' but states on the following page : ' There seem to be no records from the Nilgiris'. It has been obtained at 2000 ft. in the Biligirirangan Hills (*JBNHS* 44 : 24) but Baker & Inglis (1930) in BIRDS OF SOUTHERN INDIA, p. 278, say that the only records in Madras, Mysore, and Kerala are from the plains.

508 *Ducula aenea nicobarica* (Pelzeln) (Nicobars, restricted Car Nicobar) Nicobar Green Imperial Pigeon 5 : 210 (*insularis*)

10 : 7 ♂♂ 3 ♀♀

3 Car Nicobar ; 3 Camorta, 1 Nancowry, Middle Nicobars ; 3 Great Nicobars.

(See comments on measurements, Abdulali *JBNHS* 64 : 164/5).

508a **Ducula aenea andamanica** Abdulali (Betapur, Middle Andamans)
Andaman Green Imperial Pigeon

8 : 5 ♂♂* 3 ♀♀ (*including type)

1 Narcondam Island ; 3 Betapur, Middle Andamans ; 4 South Andamans.

509 **Ducula bicolor** (Scopoli) (New Guinea) Pied Imperial Pigeon

9 : 6 ♂♂ (1 juv.) 2 ♀♀ 1 juv. o?

5 South Sentinel Island, Andamans ; 1 Camorta, Central Nicobars ; 3 Pulu Bhabi, Great Nicobar.

	Wing	Tail
♂♂	235(2), 241, 242(2) (IH 233-238)	130(3), 134, 136 127-133)
♀♀	235, 235	128, 135 (♂♀ 125-135)

In my report on Nicobar birds (*JBNHS* 64 : 165) and in *Bull. B.O.U.* 86 : 162, I have offered an explanation for the patches of 'creamy' colour often noted on these birds.

510 **Ducula badia insignis** Hodgson (Nepal) Hodgson's Imperial Pigeon

5 : 203

nil.

511 **Ducula badia cuprea** (Jerdon) (Wynaad) Jerdon's Imperial Pigeon

5 : 205

7 : 3 ♂♂ 1 ♀ 3 o?

1 Gopshitta (Col. by T. R. Bell, N. Kanara ?) ; 1 Castle Rock, 1 Supa Petha, 1 North Kanara ; 2 Thattakad, Periyar, Kerala ; 1 Madura.

	Wing	Tail
♂♂	229, 230, 243 (210-234)	171, 178
♀	230	165

512 **Ducula badia griseicapilla** Walden (Karen Hills, between 4000 and 4200 feet) Greyheaded Imperial Pigeon

5 : 204

8 : 3 ♂♂ 1 ♀ 4 o?

2 Lakhuni, 1 Dibrugarh, Assam ; 1 *Htamgaw*, 1 *Upper Burma* ; 1 *Pangping*, *South Shan States* ; 2 20 miles west of *Rabeng, Siam*.

♂♀ Wing 228-258 (♀) (228-259) Tail 170-188

Of the two birds obtained on the same day at Lakhuni, Assam, the male (Sp. No. 12823) has a slight wash of pale lilac on the crown which is almost concolorous with the neck, while the female (No. 12824) has it grey. No specimens of *insignis* are available for comparison, but the distribution of the races in eastern India and Burma appears to need sorting out.

513 *Columba leuconota leuconota* Vigors (Himalayas, type probably from Nepal) West Himalayan Snow Pigeon 5 : 224

14 : 5 ♂♂ 8 ♀♀ 1 o?

1 Liddar Valley 12,000', 2 Kishtwar 10,000', 1 Kashmir ; 2 Palanpur 4000', 1 Simla 6500', NW. Himalayas ; 2 Jalki, Mussoorie, 1 Kulu, 1 Phurkia, Pindar Valley, Kumaon, 1 Badrinath, Garhwal ; 1 Thangu 7000', 1 Lachen, N. Sikkim.

	Wing	Bill	Tarsus	Tail
♂♂	228-246 av. 239	18(3), 19(2)	28(2), 29(2), 30	128-138 av. 133
♀♀	229-241 av. 235	18-20 av. 18·8	28-30 av. 28·5	121-136 av. 126·7
(IH ♂♀)	240-258	c. 24-25	c. 31-35	122-137)
		(from skull)		

514 *Columba leuconota gradaria* Hartert (Sungpan, Szechuan) East Himalayan Snow Pigeon 5 : 225
nil.

515 *Columba rupestris turkestanica* Buturlin (Altai) Turkestan Hill Pigeon 5 : 222

7 : 3 ♂♂ 3 ♀♀ 1 o?

1 Pamir 13,000' ; 1 Killia Drosch, Chitral, N.W.F.P. ; 2 Gaik, Indus Valley, 1 Pannanick, Nabra, 1 Lamyaru, Ladak ; 1 Badrinath, Garhwal.

	Wing	Bill	Tarsus	Tail
♂♂	230, 234, 236	15(2), 16	25(2), 26	125, 128, 131
♀♀	223, 224, 225	16(3)	24, 25(2)	119, 120(2)
(♂♀)	216-243	15-17	c. 25-28	118-130)

This confirms Stresemann's measurements 5 ♂♂ 230-240 (av. 233·4) 6 ♀♀ 219-228 (av. 233·8) quoted in IND. HANDBOOK.

EL *Columba livia* subsp.

1♂ Temple of Heaven, Peking, China, 2-9-1900.

Peters (CHECKLIST 3 : 59) lists *nigricans* Buturlin from Mongolia, and northern China in provinces of Shansi, Chihli, and Kansu, but adds that he has seen no Chinese wild-killed specimen with a white rump. The present bird has a sooty head and neck, a light brownish wash over the whole body, and a white rump. However, it may well be a cage or domesticated bird.

Wing 215 ; Bill 17 ; Tarsus 27 ; Tail 116.

EL *Columba livia gaddii* Zarudny & Loudon (Hill region of Jebel-Tyne and in the mountains east of Ahwaz and Nasiri, Lower Karun River, Southwestern Persia).

11 : 4 ♂♂ 6 ♀♀ 1 o?

1 Hawi Plain, Tigris, Mesopotamia* ; 1 Akberabad 52° 47'E., 29° 13'N., 1 Kaftarak, 1 Shiraz, 3 Birjand, E. Persia ; 1 Chah Bahar, Persian Gulf ; 3 Gusht, Persian Baluchistan.

This is no doubt the bird with the 'lower back and rump white' said to be of the nominate race in FAUNA. On the average they are noticeably paler above than those listed as *neglecta*; but the croup is not consistently white, which remark applies to *neglecta* also. Of the three from Birjand only two have white croups, while of another three from Gusht two may be included with *intermedia*. The measurements are under No. 517 and do not appear to differ from those of the other races.

No. 12857* from Mesopotamia was marked *C. l. palestinae* which it may well be, but the single specimen can be included in the variation existing in this group.

516 *Columba livia neglecta* Hume (Ladak) Blue Rock Pigeon 5 : 220

7 : 3 ♂♂ 2 ♀♀ 2 o?

1 Jandola, 3 Chitral, N.W.F.P. ; 2 Ladak, 1 Hunza Valley, Kashmir.

Five of these (except one each from Chitral and Jandola) have their croups white or grey as in *gaddi*, but are generally paler above than *intermedia*. Hume in the original description however stated that *neglecta* could be :

'distinguished from *intermedia* by its much darker general hue and by its white or more or less greyish white lower back contrasting strongly with the blackish slaty rump and upper tail coverts. This species replaces *C. intermedia* in most places in the interior of the Himalayas. The other specimen a ♀ shot at Dras, June 23, belongs to what seems to be a hybrid race between *C. neglecta* and *C. intermedia*. The general colour of the upper back, scapulars and coverts, is that of *C. intermedia*, but the lower back is a pale albescent grey or bluish white, very different from that of the latter, and resembling in this respect *C. neglecta*, but not contrasting so strongly with the dark iron grey rump and upper tail coverts as does the white lower back of *neglecta* this has been characterized by Capt. Halton (*in epis.*) as *C. spelaea*, but I scarcely think it merits specific separation.'

The formal description then reads :

'Pure white across lower back never exceeds 1.25 and in some is scarcely above an inch in extent. The whole rump, upper tail coverts and basal portion of the tail is a very deep slaty grey, contrasting very strongly with the white of the lower back. In the intermediate form the white is more or less tinged with grey and the conspicuously white portion of the back does not exceed half an inch in breadth.'

Though both *gaddi* and *neglecta* differ from *intermedia* in having a white or pale grey croup, it will be noticed that in the description *neglecta* is said to have a much darker general hue than *intermedia*, further complicated by the statement that the 'hybrid' from Dras was similar to *neglecta* in having a pale lower back and, like *intermedia* above, without clarifying if this was darker or paler than *neglecta*. Vaurie (1965 : 545)

found a pure white rump in only two of about 125 *neglecta* (including the type) examined by him. The small series available does not show much difference in size between the sexes. Paludin (1959, BIRDS OF AFGHANISTAN, pp. 112/3), who discusses the races in Afghanistan and, without access to either *neglecta* or *intermedia*, lists those from Central and Western Afghanistan as *gaddi* (à la Meinertzhagen 1938 : 707) and others with dark rumps as *neglecta*, does not help in clarifying matters.

With the material available it is not possible to express any opinion except to suggest that *neglecta*, like the other races, is liable to variation, and is really an intermediate form between *gaddi* and *intermedia*.

517 *Columba livia intermedia* Strickland (India=Calcutta) Indian Blue Rock Pigeon

25 : 11 ♂♂ 11 ♀♀ 30?

1 Rawalpindi, N.W.F.P.; 2 Harunabad, Bahawalpur, 2 Hissar, Punjab; 1 Delhi; 2 Gwalior, 1 Solon, Bhopal State, 1 Indore, C.I.; 1 Bhuj, Kutch; 1 Gir, 1 Deesa, Palanpur, 1 Bhavnagar, 2 Surat Dangs; 1 Nasik, 1 Koregaon, Poona, 1 Bombay City, 1 Ratnagiri; 1 Gersoppa, Mysore; 1 Nilambur Valley, Kerala; 1 Nellore, A.P.; 1 Garhwal, U.P.; 1 *Prome, Burma*.

It is unfortunate that the type locality has been fixed as Calcutta, for as far back as 1857 (*J. Asiatic Soc. Bengal* 26 : 223) Blyth said : 'In the vicinity of Calcutta the pure wild race can hardly be obtained'.

There is considerable variation in the depth of grey, and the birds from the northwest (Rawalpindi and Hissar, Punjab) are almost as pale as *neglecta* but lack the pale croup. Among the others, those from the west (Kutch southwards through Gujarat and Poona to Nilambur) appear darker, particularly on the underparts. Series of wild breeding birds from different parts of the country are necessary to permit any conclusions¹.

	Wing	Bill	Tarsus	Tail
<i>gaddi</i> ♂♂	215, 226, 228, 229	18, 19(3)	27(2), 28(2)	111, 116, 121, 123
	(Vaurie 230-240 av. 234)			
<i>neglecta</i> ♂♂	225, 228(2)	20(3)	27(2), 28	116(2), 120
	(Vaurie 230-242 av. 236)			
<i>inter-</i>				
<i>media</i> ♂♂	215-227 av. 224	19-21 av. 20	27-29 av. 28.1	111-115 av. 113.7
<i>gaddi</i> ♀♀	215-235 av. 224	18-20 av. 18.1	27-29 av. 27.6	109-121 av. 114.5
	(Vaurie 224-235 av. 229.5)			
<i>neglecta</i> ♀♀	225, 230(2)	20(2)	27, 29	110, 112
	(Vaurie 218-241 av. 228.1)			
<i>intermedia</i>				
	♀♀ 212-223 av. 216	18-21 av. 19.8	26-28 av. 27	107-116

¹ After this was completed, I noticed among the several hundred semi-wild pigeons which collect to be fed in the enclosed island in the middle of the road opposite the G.P.O. in Bombay, a much greater range of intensity of colour than is shown among the different subspecies referred to above. Though some show a pale rump, none have it all-white, as in some *neglecta* and *gaddi*.

518 *Columba eversmanni* Bonaparte (Western and central Asia)
Eastern Stock Pigeon 5 : 226

5 : 2♂♂ 2 ♀♀ 1 o?

2 Harunabad, Bahawalpur, Punjab ; 1 Gwalior, C.I. ; 1 Dhunapur, Darbhanga, Bihar ; 1 Hardoi, U.P.

	Wing	Bill	Tarsus	Tail
♂♂	200, 208	18, 18	25, 25	97, 106
♀♀	206, 206	19, 20	25, 26	99, 105
(♂♀)	200-210	c. 16-19	c. 26-28	96-105 <i>ex</i> Hartert)

The specimen from Gwalior extends the known winter range of the species (*JBNHS* 67 (2) : 331).

One each of *Columba livia gaddi* and *C. oenas* from Persia were listed under this species.

EL *Columba oenas* subsp. Stock Dove

1♀ *Pir-i-Bann, Shiraz, Persia.*

Wing 202; Bill 18; Tarsus 26; Tail 114

This was included under *C. eversmanni*, but differs in having a grey (not white) croup and a grey (not vinous) head. The tail is also longer.

519 *Columba palumbus casiotis* (Bonaparte) (Chinese Tartary) Eastern Wood Pigeon or Cushat 5 : 227

5 : 1 ♂ 2 ♀♀ 2 o? juveniles*

1* *Basra, Mesopotamia* ; 1* *Kotri, Sind* ; 2 *Koti State*, 1 *Dhami State*, *Simla Hills.*

	Wing	Bill	Tarsus	Tail
♂	259	22	31	171
2♀♀	247, 251	22, 25	31, 32	166, 167
2 juv. o?	225, 231	23	25, 28	152, 156
(♂♀)	243-263	c. 17-18	—	—)

The male is the greyest above, while the juveniles are the dullest in colour.

520 *Columba hodgsonii* Vigors (Nepal) Speckled Wood Pigeon 5 : 234

16 : 8 ♂♂ 7 ♀♀ 1 o?

2 *Pujas, Kishitwar, Kashmir* ; 2 *Mussoorie* ; 3 *Bhimtal 4300'*, 1 *Rhurkia*, 2 *Gorikund, Kederinath, Kumaon* ; 1 *Chala-Khel, Nepal* ; 2 *Dubin, Aka Hills, S. Shan States* ; 2 *Saidon, Myitkyina Dt., Burma*, 1 *Lambathuch?*

	Wing	Bill	Tarsus	Tail
♂♂	225-235 av. 232	16-18 av. 17·1	24-26 av. 24·6	143-148 av. 145·3
♀♀	222-236 av. 230	16-19 av. 17·5	23-26 av. 24·5	139-150 av. 145
(♂♀)	228-244	c. 16-18	c. 24-26	140-153)

521 *Columba elphinstonii* (Sykes) (The Ghauts of Dukhun) Nilgiri Wood Pigeon 5 : 228

5 : 2 ♂♂ 3 o?

1 *Bhimashanker, Poona* ; 1 *Kirma Valley, Satara* ; 1 *Castle Rock, N. Kanara* ; 1 *High Wavy Mountains*, 1 *Edluth, Biligirirangan Hills, Coimbatore.*

Wing	Bill	Tarsus	Tail
204-210 av. 205·8 (204-224)	19-21 av. 20·1 (c. 17-18)	24-26 (c. 25-26)	150-153 (152-178)

522 **Columba torringtoni** Bonaparte (Ceylon) Ceylon Wood Pigeon 5 : 229

1 ♂ Hakgalla, Ceylon.

523 **Columba pulchricollis** Blyth (Nepal) Nepal or Ashy Wood Pigeon 5 : 230

3 : 2 ♂♂ 1 ♀

1 Hathiban, 1* Walung Forest, Nepal ; 1 Woodcot, Darjeeling.

* This specimen is out on loan to the Zoological Survey of India and not available.

Bill from feathers, 18, 18 (16-17).

524 **Columba punicea** Blyth (Chyebassa, Bihar) Purple Wood Pigeon 5 : 232

2 : 1 ♂ 1 ♀

1 Bailadila, Bastar, M.P. ; 1 Tezu, Lohit Valley, Upper Assam,

	Wing	Bill	Tarsus	Tail
♂	223 (210-236)	18 c. 16-17	23 c. 23-25	154 152-178)
♀	218 (203-225)	17 —	24 —	135 —

525 **Columba palumboides palumboides** (Hume) (Port Mouat, Andamans) Andaman Wood Pigeon 5 : 233

5 : 2♂♂ 3♀♀ (1 juv.)

1 Long Island, 1 Bakultala, 1 Betapur, Middle Andamans ; 1 Bambooflats, 1 South Andamans.

525a **Columba palumboides nicobarica** (Walden) (Trinkut, Nicobars) Nicobar Wood Pigeon

3 ♂♂

1 Nancowry, 1 Camorta, Middle Nicobars ; 1 Campbell Bay, Great Nicobar.

See Abdulali, *JBNHS* 64 : 166/7, *re* measurements and validity.

526 **Macropygia unchall tusalia** (Blyth) (Darjeeling) Bartailed Cuckoo-Dove 5 : 253

8 : 5♂♂ 3♀♀

1 Balasun, 2000' near Darjeeling ; 2 Pashok, Sikkim ; 2 Kangpokpi, Manipur ; 2 Kachin Hills, 1 Irrawady R., Ruby Mines, Burma.

Both males and females are in two plumages, presumably representing immature and adult. In males, the young have the head and underparts barred throughout, the barring lessening with age and being absent in

both places in the adult. The females are all barred below, but only the juvenile is barred on the head (*contra* IH 3 : 138).

	Wing	Bill	Tarsus	Tail
Adult ♂	195, 196, 196 (177-203)	16, 17, 18 (13-15)	21, 22, 23 (16-18)	181, 185, 197 (200-210)
Imm. ♂	185, 189	16	22(2)	164, 190
Adult ♀	183, 187 (191-200)	15, 16	22, 23	176, 178
Imm. ♀	186	—	—	—
		17	22	176

527 *Macropygia rufipennis rufipennis* Blyth (Central Nicobars)
Nicobar Cuckoo-Dove 5 : 255

3 : 2♂♂ 1♀

2 Camorta, 1 Nancowry, Central Nicobars.

	♂♂	♀
Wing	197, 199	199 (♂♀ 180-193)
Bill	18, 18	.. (♂♀ 12-13)
Tail	194 broken, 205	194 (♂♀ 210-233)

Sclater (*Ibis*, 1892, pp. 72-87) in a list of type specimens of birds in the Indian Museum refers to types of *M. rufipennis* collected by Capt. Lewis and Rev. P. Barbe, s.j. Blyth (1846) described this species in 'Notes on the Fauna of the Nicobar Islands', which is preceded by 'Notice of Nicobar Islands' by Barbe. Both these papers indicate that the specimens were obtained in the Central Nicobars and, in view of the possibility of the birds from further south (Kondal and Great Nicobar) being separable (see *JBNHS* 64 : 167), I am restricting the type locality to Central Nicobars.

527a *Macropygia rufipennis andamanica* Abdulali (Betapur, Middle Andamans)

3 ♂♂

1 Bakultala, 1 Betapur, Middle Andamans ; 1 Calicut, South Andamans.

I am afraid my observation in my description of *M. r. andamanica* (*JBNHS* 63 : 421), that 'none of my specimens show the "lilac-purple gloss on the crown of the male" mentioned in most earlier descriptions,' has led to a mistake in the key to the subspecies of *M. rufipennis* at p.139 of INDIAN HANDBOOK Vol. 3. The distinguishing character between the two races was given earlier in my description, namely a fine rufous fringe to the outer web of the primaries in contrast to basal two-thirds entirely rufous in *M. r. rufipennis* making a striking patch of colour in the folded wing. When I spoke later of the absence of the lilac-purple gloss I was referring to all the specimens obtained by me in this trip, which included both the subspecies.

EL *Streptopelia turtur turtur* (Linnaeus) (England) Turtle-Dove
5 : 236

2 o? *Felujah, R. Euphrates, Mesopotamia.*

Nos. 12933 and 12934 are slightly darker than those listed under *arenicola* and are marked as of the nominate race by Ticehurst (*JBNHS* 28 : 947).

529 *Streptopelia turtur arenicola* (Hartert) (Fao on the Persian Gulf)
Persian Turtle-Dove 5 : 237

15 : 5♂♂ 9♀♀ 1 o? (4 juv.)

4 20 m. from *Muscat, Arabia* ; 1 *Wadi, R. Tigris*, 1 *Zobair*, 2 *Basra, Mesopotamia* ; 1 *Persian Gulf* ; 2 *Tanhat*, 3 *Shiraz, Persia* ; 1 4100' *Kashgar, Chinese Turkestan.*

The four from near Muscat are juveniles (?) in two separate phases and differ from the others, which show a varying amount of rufous on the upperparts. Their underparts are also a dull khaki brown, showing no white as in the others.

Wing ♂♂	168-178 av. 172
♀♀	159-167 av. 163.5

The present measurements confirm Paludin's figures from Afghanistan indicating that the males are larger than the females.

530 *Streptopelia orientalis orientalis* (Latham) (China) Rufous Turtle-Dove 5 : 238

2 : 1♂ 1♀ *Temple of Heaven, Peking.*

	Wing	Bill	Tarsus	Tail
♂♀	201, 205	19, 17	26, 26	138, 130
(♂♀)	180-198	15-17	25-28	130-135

IH, ex Hartert)

These two with slightly larger wings, pale and almost unicolorous underparts, followed by *white* undertail coverts, cannot be matched with any of the others available for examination.

531 *Streptopelia orientalis meena* (Sykes) (Dukhun) Western Turtle-Dove 5 : 239

30 : 13♂♂ 12♀♀ 5 o?

1 *Kushak, Mashkil, Persian Baluchistan* ; 1 Wano, Waziristan ; 2 Chitral ; 7 Simla ; 1 8000' Dalhousie, Punjab ; 1 Gwalior ; 1 Chikalda, Berar ; 2 Chickli Surat Dangs ; 1 Wada, 3* Bhiwandi, 1 Vajrabai, Thana ; 1 Pavel, Kolaba ; 1 Khandala ; 2 Mahableshtar ; 1 Singewadi, 1 Supa Petha, Kanara ; 1 Rajputtee, Chupra, Bihar ; 2 Garhwal. *(1 missing).

All have white lower bellies and undertail coverts and cannot be confused with any of the other forms accepted in Indian limits. There is considerable variation in the intensity of the colours of the upper breast and the upperparts, but it is not possible to isolate them in any manner and this variation must for the moment be accepted as normal within

the subspecies. Four specimens from Persian Baluchistan, Wano, Simla (No. 12964), and Mahableshwar (No. 19170), all obtained in October-November, are not distinctly marked on the wing coverts and probably represent an immature phase.

The three races of which we have specimens obtained in India measure :—

<i>meena</i>	<i>agricola</i>	<i>erythrocephala</i>
	Males	
Wing 184-210 av. 193 (IH ♂♀ 185-207 av. 196·2)	183-192 av. 180 (186-198)	177-186 av. 182 (183-193)
Bill 16-18 av. 17 (From skull ♂♀ c. 22-23)	15-18 av. 17 (22-24)	16-18 av. 17 (22-24)
Tarsus 23-26 av. 23·7 (IH ♂♀ c. 26-28)	22-26 av. 23 (c. 26-27)	22-24 av. 23 (25-28)
Tail 113-136 av. 127 (IH ♂♀ c. 122-140)	119-138 av. 128 (135-140)	118-131 av. 124 (122-134)
	Females	
Wing 181-196 av. 188 (IH ♂♀ 185-207 av. 196·2)	194 (184-191)	173-184 av. 176 (179-190)
Bill 15-18 av. 17 (IH ♂♀ from skull c. 22-23)	17 (22-24, once 28)	16-18 av. 17 (22-23)
Tarsus 23-25 av. 23 (IH ♂♀ c. 26-28)	23, 25 (26-27, once 30)	21-24 av. 23 (26-27)
Tail 118-138 av. 126 (IH ♂♀ c. 122-140)	128-130 (112-132)	110-120 av. 117 (112-127)

Ludlow and Kinnear (*Ibis* 1934 : 97-98) have given sufficient reasons to accept *meena* as the form with white belly and undertail coverts, which is a cold weather visitor to the Deccan.

532 *Streptopelia orientalis agricola* (Tickell) (Jungles of Borabhúm and Dholbhúm) Eastern Turtle-Dove

8 (details below)

(a) 3 : 2♂♂ 1♀

2 Sadiya, Upper Assam, 1 Manipur.

(b) 5 : 4♂♂ 1♀

1 S. Tibet, 1 Sipuri, Nepal ; 2 Rinchingpong, 5500', West Sikkim ; 1 Assam.

Group (a) resembles *orientalis* in the lack of rufous on the upper parts but has dark grey undertail coverts. Group (b) has much rufous above, dark grey (slightly paler in 12957 from Tibet) undertail coverts, and cannot be separated from those listed as *erythrocephala* below. All except two of the eight specimens have been marked *agricola* by Sálím Ali or Ripley.

Tickell's original description is incomplete and may well apply to either (a) or (b), but it is significant that it is prefaced by the words 'Foxy Pigeon', a term which applies better to the specimens in group (b).

Sálím Ali has in recent years collected a fair series from Bastar and also from Orissa, some of the camps in which State were a hundred miles

south of Dholbhúm, the type locality of *agricola*. These specimens are now accepted as *erythrocephala*, as they are similar to the form resident in most of peninsular India.

Roonwal (1941, *Rec. Ind. Mus*, 43 : 332) groups birds with dark grey undertail coverts from Manbhúm and Ranchi in Bihar, Kendrapara in Orissa, and others from further south and east as *agricola* and goes on to quote Stuart Baker (5 : 231) that *agricola* straggles as far south-west as Mahableshwar ; he makes no reference to *erythrocephala*. A series obtained in 1966 by Sálím Ali in Bhutan is very similar to group (a) above. There is apparently no record supported by a specimen of the variety in group (a) north of the type locality up to the Himalayas, and there seems to be ground for holding that the name *agricola* really covers the 'foxy' birds now grouped under *erythrocephala* (1855) and resident over most of peninsular India. If this is correct, the name *agricola* (1833) would take precedence over *erythrocephala*.

533 *Streptopelia orientalis erythrocephala* (Bonaparte) (Mysore)

23 : 13♂♂ 9♀♀ 1 ♂?

2 Bhimashanker, Poona ; 1 Mahableshwar, 1 Helwak, Koyna Valley, Satara ; 1 Sirsi, N. Kanara ; 1 Jubbulpore, 1 Balaghat ; 2 Antagarh, 2 Darbha, 2 Chota Dongar, 1 Kameli, 1 Barsur, Bastar ; 1 Bhanuprattapur, 1 Lohatter, Kanker ; 3 Koira, 2 Badrawa, 1 Kuldiha, Nilgiri, Orissa.

These birds (collected October to February) are distinguished from the others by their dark grey undertail coverts, darker rufous above and below, and the absence of white on the lower belly. The amount of rufous on the forehead is variable, being tinged with grey or even having the foremost one-third of the head pure grey (Sp. 19153, ♂ testes : 20×10 mm., Kanker, M.P.). Nine of them with underparts slightly darker than in the others include 7 males, 5 of them with developed gonads, and 2 females. The paler birds, which also include breeding males and females, may possibly represent a first year plumage.

A male and a female (Nos. 19158 and 19167), marked juvenile by the collector (Sálím Ali) can be distinguished by their slightly paler upperparts and the rufous edges to the tips of the primaries.

Nos. 19151 (Jubbulpore 19 February), 12970 (Sonawain 28 December), and 19172 (Bhimashanker, Poona 21 October) are peculiar in having pale grey or almost white undertail coverts, but differ from *meena* in the absence of white on the lower belly.

Under *agricola* I have referred to the possibility of the specimens marked as of this subspecies being in fact the form described earlier as *agricola*, and I have spent considerable time examining and trying to sort out the differences between the specimens of this species available to me. There is still much that is not clear, and I am certainly not in a position to explain Davidson's (*JBNHS* 5 : 330) shooting of specimens, right-and-left, one with white and the other with grey undertail coverts, and Barnes's

addition to this notes : 'I have shot moulting birds with the new under-tail coverts white, and the old ones grey'. A more elaborate explanation than possible in the process of cataloguing the collection is necessary and so I am leaving the present distribution under the subspecies undisturbed.

534 *Streptopelia decaocto decaocto* (Frisvaldszky) (India, based on a pale domesticated bird) 5 : 248

38 : 18♂♂ 17♀♀ 3 o? (1* albino ♀)

1 *Baghdad*; 1 *Fao*, 2 *Persian Gulf*; 1 *Shustar*, 1 *Duzdab, Persia*; 1 *Shadad*, 72 m. south of Kalat, 1 *Muradkhan*, 2 *Dandar* (W. Kolwa), 2 *Sib*, 1 *Rohtak R.*, *Baluchistan*; 2 *Chitral*, 1 *Sarorogha, N.W.F.P.*; 1 *Simla*, 1 *Keonthal*; 1 *Bahawalpur*; 1 *Garo, Sind*; 2 *Bharatpur*; 1 *Gwalior*; 1 *Gir*, 1 *Ahmedabad*, 1 *Dabka, Baroda*; 3 *Kalyan, Thana*; 1 *Rewas, Kolaba*; 1* *Jalna, Aurangabad*; 2 *Satara*; 1 *Bastar, M.P.*; 1 *Meerut*, 1 *Garhwal, U.P.*; 1 *Kashgar*; 1 *Bhuzawani*?

Four (2 ♂♂ 1 ♀ 1 o?) from Duzdab, Sib (2), and Kalat collected in September/October are noticeably paler above, have the neck-rings brownish, and are also slightly smaller (wings 159, 162, 151, 154; tails 117, 122, 113, 106), and are probably juveniles.

Fresh specimens of both sexes appear greyer and less brown than the older ones, while the males have greyer heads than the females, most of which are pale brown all over.

	Wing	Bill	Tarsus	Tail
♂♂	159-175 av. 167	15-17 av. 15.9	20-22 av. 21.2	115-139 av. 128
♀♀	151-180 av. 162.5	15-16	20-22 av. 20.9	113-133 av. 124
(♂♀)	158-169	16-18	23-26	117-140)

535 *Streptopelia tranquebarica tranquebarica* (Hermann) (*Tranquebarica*) Indian Red Turtle-Dove 5 : 250

9 : 8♂♂ 1♀ (in male plumage)

1 *Dhirpur*, 1 *Ambala, Punjab*; 1 *Bharatpur, Rajasthan*; 1 *Kalyan, Thana*; 1 *Panvel, Kolaba*; 2 *Poona*; 1 *Bulandshar*, 1 *Cawnpur, U.P.*

It is curious that there is only female specimen, and that in male plumage. The measurements are included under the next form.

536 *Streptopelia tranquebarica humilis* (Temminck) (*Bengal and Luzon*) Burmese Red Turtle-Dove 5 : 251

10 : 4♂♂ 6♀♀ (1 juvenile*)

1 *Long Island*, 1 *Bakultala, Middle Andamans*; 1 *Wrightmyo*, 1 *Ferrarganj*, 2 *South Andamans*; 1* *Mirpur, Bengal*; 1 *Maymyo*, 1 *Prome*, 1 *Henzada, Burma*.

	Wing	Bill	Tarsus	Tail
<i>tranquebarica</i>				
♂♂	132-144 av. 137·8	13-15 av. 13·7	17-19 av. 18·3	77-89 av. 83·3
♀	138	14	18	84
<i>humilis</i>				
♂♂	137, 137, 139, 146	14(3), 15	19(2), 20(2)	83, 84(2), 88
♀♀	134-143 av. 138·4	13, 14(2), 15(2)	17, 18(2), 19(2)	78-84 av. 81·6
(IH ♂♀	136-145	from skull	17-21	84-92)
		16-19		

In my Andaman report (*JBNHS* 61 : 527), I have already referred to females of both races in male plumage and to the difficulty of understanding, with the material available, the sequences of plumage of this species.

537 *Streptopelia chinensis suratensis* (Gmelin) (Surat, Gulf of Cambay)
 Indian Spotted Dove 5 : 242

44 : 25♂♂ 18♀♀ 1o? (2 juveniles)

1 Chitral, N.W.F.P. ; 1 Kishtwar, Kashmir ; 1 Keonthal State, 3 Simla ; 1 Nadiad, Gujarat ; 2 Mumbra, 1 Kalyan, Thana ; 1 Andheri, 1 Powai Lake, 1 Santa Cruz, Bombay ; 1 Panvel, 2 Pen, 1 Apte, Kolaba ; 1 Santyal, Kanara ; 1 Udipi, Mysore ; 1 Nilambur Valley, Kerala ; 1 Shevaroy Hills, 1 Chitteri Range, S. Arcot ; 1 Koira, 2 Konta, 1 Bijapur, Bastar, 4 Bhanuprattapur, Kanker ; 1 Barkot, 1 Keongarh, Orissa ; 1 Patharghatta, Bihar ; 1 Meerut, 1 Almora, 1 Naini Tal, 1 Gharwal ; 1 Rongi Valley, Sikkim ; 1 Cherali, Nakacheri, Naga Hills, 1 Margherita, 1 Lohit Valley ; 3 Dimapur, Manipur.

There is a wide range of variation in the number and colour of the spots and the general intensity of the colour of the upper parts, but except for a diminution in size from north to south it is not possible to associate any of these differences with sex, season, age, or locality. Those from Bastar, Kanker, and Orissa appear to have heavier bills and are in series darker above, and lack the spots on the back, showing a similarity to those from the north-east, the tendency continuing and merging with *tigrina* of Burma (q.v.). The Assam specimens are of different shades of colour but there are none which I can separate as *edwardi* or *tigrina*, and I am leaving all from Indian limits as *suratensis*.

The collection contains only one juvenile No. 19185 ♂ wing 132, tail 110 Kanker, in which the upperparts and wing coverts are edged with rufous resembling *orientalis* rather than this species. Another (No. 12979 ♀ Nilambur Valley wing 119, tail 100) appears to be juvenile, but already has the spotted pattern on the neck. In addition the upperparts are unevenly marked with white, indicating an aberrant plumage. Goodwin (1959), in 'Some Colour Varieties of Wild Pigeons' (*Bull. B.O.C.* 79 : 3-9) refers to an unsexed female of this species at the British Museum (N.H.) being marked with silvery grey. In his note he draws attention to the fact that such deviations from the norm are only found in females.

	Wing	Bill	Tarsus	Tail
♂♂	127-149 av. 139	14-17 av. 15·5	18-23 av. 20·5	106 (next 118)-143 av. 133
	(IH 135-146	..	21-24	118-143)
♀♀	128-146 av. 136	15-17 av. 15·8	20-22 av. 20·3	122-129 av. 127
	(IH 132-143	..	20-24	117-133)

tigrina

♂♂	138, 141, 142, 146	14, 16, 16, 17	20, 21, 22, 23	128, 134, 136, 137
♀	146	15	23	144
	(♂♀ 137-155)

538 *Streptopelia chinensis ceylonensis* (Riechenbach) (Ceylon) Ceylon Spotted Dove 5 : 245

1 ♂? Ceylon

Wing 129 (123-129 ; IH 128-136) ; Tail 129 (♂ 114-132 ; ♀ 118-127)

The wing measurements in Stuart Baker are smaller than those quoted from Whistler in IH 3, p. 154. In the latter, the key requiring a wing under 130 mm. is not in keeping with the measurements cited (128-136).

539 *Streptopelia chinensis tigrina* (Temminck) (Java) Burmese Spotted Dove 5 : 244

6 : 1♂ 4♀♀ 1 ♂?

2 Da Lu, Chindwin R., 1 Pakoku ; 1 Khayauk, Thayetmyo Dist. ; 1 Prome Dist. ; 1 3-Stockade (collected by Linching)?

As explained under 537, these birds have been arbitrarily separated on geographical grounds. The birds from 3-Stockade and Pakoku District have spots on their upperparts and may be included with those from India. The two from Da Lu, bearing the labels of the Vernay-Hopwood Chindwin Expedition, are dark above with black centres to the feathers and no buff or white spots.

540 *Streptopelia chinensis edwardi* Ripley (Chabua, Lakhimpur Dist., NE. Assam.) NEFA Spotted Dove

nil.

After these notes were completed, I was able to examine through the courtesy of Dr. Ripley and the U.S. National Museum four female specimens of *edwardi* from Chabua (3) and Nangpoh, Garo Hills (1). The upperparts of two from Chabua are darker than in any of the others, but the other two are spotted above and may well be included with the series of *suratensis*, except that all four have almost pure grey heads with none of the vinous tinge invariably present in *suratensis*. The specimens of *edwardi* do not show spots of "darker buff" as stated in IND. HANDBOOK. The measurements also average slightly larger.

Wing	Tail
138, 141, 146, 147	126, 133 (2), 135

A larger series from Burma and north-east India needs to be compared with topotypes of *tigrina* to determine the distribution of these races.

541 *Streptopelia senegalensis cambayensis* (Gmelin) (Gulf of Cambay), Indian Little Brown Dove 5 : 246

28 : 20♂♂ 8♀♀ (1 missing)

2 Quetta, 2 Karak, Baluchistan ; 1 Chitral, 1 Jandola, N.W.F.P. ; 1 Bhajji, H.P. ; 1 Ambala ; 2 Bharatpur ; 1 Kutch ; 1 Cambay, 1 Bhavnagar ; 1 Ghoti, Nasik, 1 Kalyan, 5 Belapur, Thana ; 1 Cumbala Hill, Bombay ; 1 Nagotna, Kolaba ; 1 Panchgani, 1 Satara ; 1 Cumbum Valley, Kurnool ; 2 Hoshangabad, M.P. ; 1 Bulandshar, U.P.

Old skins are browner than fresh ones.

The birds measure :

	Wing	Bill	Tarsus	Tail
♂♂	120-139 av. 129 (IH 121-137)	13-17 av. 15.2 From skull 17-19	17-22 av. 18.7 18-22	103-126 av. 116 107-119)
♀♀	123-130 av. 126.5 (IH 124-134)	13-16 av. 15.1 From skull 17-19	17-18 av. 17.1 20-21	104-116 av. 107.8 104-113)

The northern birds average slightly larger than the southern.

542 *Chalcophaps indica indica* (Linnaeus) (Amboina) Indian Emerald Dove 5 : 215

18 : 9♂♂ 6♀♀ 3 o ?

2 Simla ; 1 Mahal, Surat Dangs ; 1 Anshai Ghat, 1 Santgal, N. Kanara ; 2 Shembaganoor, 1 Palni Foothills, 1 Manalur, Palni Hills, 1* Tenmalai, S. Travancore ; 1 Lamasinghi, Vizagapatam ; 1 Berbera, Puri ; 1 Hazaria, Patharghatta, Bihar ; 1 Chang Chang Pani, 1 Margherita, Assam ; 1 *Myitkyina*, 2 *Singha Ling*, Burma.

Two marked females (Patharghatta, Bihar, and Margherita, Assam) have a little white on the forehead, the one from Assam further resembling the male in being greyish-vinous and less brown on the underparts. The type specimen* of *C. indica salimalii* Mukherjee, from Tenmalai, Central Travancore, has the grey of the nape connected by a narrow median line with the grey on the upper back, presumably resembling *robinsoni* Baker, from Ceylon. *Salimalii* is not now recognised.

Measurements are under 544.

543 *Chalcophaps indica robinsoni* Baker (Cocawatte Estate, Ceylon) Ceylon Emerald Dove 5 : 214
nil.

544 *Chalcophaps indica maxima* Hartert (Golapabung, South Andamans)

6 : 4♂♂ 2♀♀

2 Wrightmyo, 1 Bakultala, 1 Chirria Tapu, S. Andamans ; 1 Car Nicobar ; 1 Camorta, Central Nicobars.

Only two males, one each from South Andamans and Car Nicobar, have been added to the collection after my notes on Nicobar birds (*JBNHS* 64, p. 168). The former (wing 154, tail 98) confirms the difficulty of separating *maxima* by size, while the latter, a poor skin, has a large 159 mm. wing, and 95 mm. tail.

	Wing	Tail
Nominate ♂	141-156 av. 147.7 (IH 147-156)	85-98 av. 93 93-100)
<i>maxima</i> ♂	150, 154, 154 (Hartert 157-164)	88, 96, 98
Nominate ♀	140-149 av. 143.5 (IH 147-149)	83-98 av. 90 89-91)
<i>maxima</i> ♀	148	90
Camorta ♀	148	83

Subject to the remarks in the abovementioned paper, I am leaving the Camorta specimen with *maxima*.

544a *Calaenas nicobarica nicobarica* Linnaeus (Nicobar Islands)
Nicobar Pigeon 5 : 213

7 : 2♂♂ 3♀♀ 2o? (1* chick in spirit)

1 North Reef Island ; 1 Mannarghat, 2 South Sentinel Island, Andamans ;
3* Battye Malve, south of Car Nicobar.

	Wing	Bill	Tarsus	Tail
♂♂	240, 255	24, 25	38, 41	88, 90
♀♀	245, 265	25, 25, 25	37, 38, 41	88, 89, 94

A ♂ and a ♀ obtained on South Sentinel Island on 16 and 15 March 1969 respectively are identical, both being brilliantly green above and with the hackles longer in the female. The other two females from Battye Malve are not so brilliantly green, but this may be due either to the fact that they are both poorly preserved or that they represent an intermediate plumage.

The reference to a slaty grey pigeon in IND. HANDBOOK appears to be in error.

The claws in the preserved specimens are all pale coloured, almost white.

(to be continued)